

[Translation of a document consisting of 13 pages.]

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NATIONAL TECHNICAL ASSESSMENT

ITB-KOT-2020/1241 revision 1

This National Technical Assessment has been issued pursuant to the Regulation of the Minister of Infrastructure and Construction of 17 November 2016 on national technical assessments (Journal of Laws of 2016, item 1968) by the building Research Institute in Warsaw, at the request of the company:

The National Technical Assessment ITB-KOT-2020/1241 edition 1 is a positive assessment of the performance of the following construction products for the intended use:

EVER-K platform gratings and EVER-S stair treads made of glass-fibre reinforced polyester resin

Date of validity of the National Technical Assessment:

30 June 2025.

Warsaw, 30 June 2020

The Document of National Technical Assessment ITB-KOT-2020/1241 edition 1 contains 13 pages, including 2 Annexes. The text of this document may be copied only in its entirety. Publication or dissemination in any other form of excerpts from the text of the National Technical Assessment requires a written agreement with the Building Research Institute.

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1. TECHNICAL DESCRIPTION OF THE PRODUCT

This National Technical Assessment covers EVER-K platform gratings and EVER-S stair treads, made of glass fibre reinforced polyester resin,

The National Technical Assessment covers the following product types:

- EVER-K platform gratings, 30 mm high,
- EVER-K platform gratings, 38 mm high,
- EVER-S stair treads, 30 mm high,
- EVER-S stair treads, 38 mm high.
- ANTI SLIP SHEET, 2mm and 4mm



The mesh size of the platform gratings and stair treads is 38 x 38 mm. The EVER-K platform gratings and the EVER-S stair treads have a surface dimension of 3660 x 1220 mm.

The platform gratings are made of glass fibre composite, isophthalic polyester resin, aluminium hydroxide, fire retardant and additives. The composite density is $1.79 \text{ g/cm}^3 \pm 5\%$ according to PN-EN ISO 1183-1:2019.

The products covered by this National Technical Assessment are shown in Annex A.

2. INTENDED USE OF THE PRODUCT

The EVER-K bridge gratings and the EVER-S stair treads of glass fibre reinforced polyester resin are intended to be used as platforms and landings for pedestrian traffic, inside and outside public and industrial utility buildings and as covers for ducts and tanks.

The products covered by this national technical assessment may be used in areas exposed to liquid aggressive environments in the form of mineral oils, edible oils and dilute inorganic acids (with concentrations up to 10%): sulphuric, hydrochloric or nitric acid.

For fire safety reasons, the EVER-K platform gratings and EVER-S stair treads mounted without primer or non-flammable primer (at least class A2-s1, d0 reaction to fire according to PN-EN 13501-1:2019) are classified according to PN-EN 13501-1:2019 in reaction to fire classes:

- B_{fl} - s1 and as flame-retardant, on the basis of the Regulation of the Minister of Infrastructure of April 12, 2002 on the technical conditions to be met by buildings and their location (Journal of Laws of 2019, item 1065) - when used as flooring elements,
- E and as self-extinguishing, on the basis of the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location (Journal of laws, 2019, item 1065) - when used as non-flooring applications.

The products covered by this National Technical Assessment should be used in accordance with:

- A technical project developed for a particular application, Polish technical standards and regulations, and in particular the Regulation of the Minister of Infrastructure of 12 April 2002 on the technical conditions to be met by buildings and their location (Journal of laws, 2019, item 1065),
- the provisions of this National Technical Assessment,
- instructions for use, developed by the manufacturer and delivered to customers.

3. PRODUCT PERFORMANCE CHARACTERISTICS AND METHODS APPLIED TO THEIR ASSESSMENT

3.1. Performance characteristics of the product

The characteristics of EVER-K platform gratings and EVER-S stair treads are given in Table 1.

Table 1

Item	Essentials Characteristics	Performance	Evaluation Methods
1	2	3	4
1	Dimensional deviations, mm:		
	- length L	± 5.0	section 3.2.1
	- width B	± 5.0	
	- clear mesh size c, d	± 1.5	
	- mesh size in the l ₁ axis	± 1.0	
	- wall thickness e, f	± 1.0	
	- height h	± 1.0	
2	Dimensional stability at +50°C, %	≤ 0.1	section 3.2.2



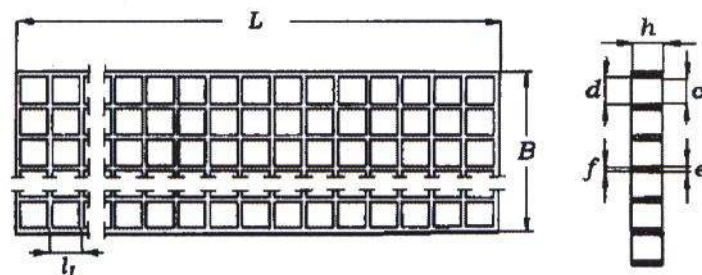
Item	Essentials Characteristics	Performance	Evaluation Methods
1	2	3	4
3	Charpy impact strength, kJ/m ²	≥ 90	PN-EN ISO 179-1:2010 1fU method
4	Anti-slip properties, class	R13	DIN 51130:2004
5	Tensile strength, MPa	≥ 100	section. 3.2.3
6	Tensile modulus of elasticity, MPa	≥ 8000	
7	Flexural strength, MPa	≥ 350	PN-EN ISO 178:2011+A1:2013
8	Flexural modulus of elasticity, MPa	≥ 14000	
9	Resistance to impact at +23 °C and -20 °C.	no delamination or cracks	PN-EN 13245-1:2010
10	Chemical resistance to declared aggressive environments: - 10% sulphuric acid solution - 10% hydrochloric acid solution - 10% nitric acid solution - mineral oil - edible oil specified: - by weight change, % - by change of external appearance - by change of Charpy impact strength, %	 ± 2% possible colour change (lightening) ≤ 2	PN-EN ISO 175:2010 PN-EN ISO 179-1:2010 1fU method
13	Resistance to accelerated ageing after irradiation of 8000 MJ/m ² , specified by: - change of colour - change of Charpy impact strength, %	 ΔE _{ab} * ≤ 8 ≤ 3	
14	Deflections	according to Annex B	
15*)	Reaction to fire class: - applications as flooring elements - applications other than flooring	B _n - s1 E	

*) classification refers to EVER-K platform gratings and EVER-S stair treads mounted without primer or on non-flammable primer (at least class A2-s1, d0 reaction to fire according to PN-EN 13501-1:2019)

3.2. Methods used for the assessment of performance

The assessment methods are listed in Table 1 and in 3.2.1 + 3.2.4.

3.2.1. Checking the dimensions. The length and width are measured with a linear rule with an accuracy of 1 mm, the other dimensions - with a sliding calliper with an accuracy of 0.01 mm. The dimensions of the platform gratings and stair treads are indicated in the figure below.



3.2.2. Checking the stability of dimensions at a temperature of + 50 °C. The dimensional stability at the temperature of + 50 °C is checked on 6 samples. Two marks must be stuck on each specimen, along the length of the grating, 250 mm apart. After the joint has hardened, the initial measurement should be made with an accuracy of 0.01 mm. The samples so prepared are placed in a climatic chamber at a temperature of +50 ± 2 °C for 6 h and then



conditioned under laboratory conditions for 24 h. After this time, the final measurement is carried out at the same locations and with the same accuracy. The stability of the dimensions is calculated as follows:

$$\frac{l_1 - l_0}{l_0} \times 100\%$$

where:

- l_1 - end measurement, mm
- l_0 - initial measurement, mm.

3.2.3. Checking the tensile strength and the tensile modulus of elasticity. The tensile strength and the tensile modulus of elasticity are checked on 12 samples for each type of platform grating. The test is performed on a testing machine with a head travel speed of 50 mm/min. The result is taken as the arithmetic mean of the measurements of twelve samples.

3.2.4. Checking the deflection. The deflection is checked by loading the gratings up to the values given in Annex B:

- with linear load in the middle of the span using a pressure stamp of the width of the sample,
- with a pair of forces or four forces evenly distributed over the entire length of the sample with pressure stamps of the width of the sample.

During the test, the load and the deflection of the grating at the centre of the span is continuously recorded.

4. PACKAGING, TRANSPORT, STORAGE AND METHOD OF MARKING OF THE PRODUCT

The products covered by this National Technical Assessment should be delivered in the manufacturer's original packaging in a manner which ensures that their technical properties remain unchanged.

The products may be transported by any means of transport in a manner that protects the packages from mechanical damage, in accordance with the manufacturer's instructions.

The products should be stored in dry, ventilated rooms, away from heating devices, in such a way as to ensure safe storage and the consistency of their technical properties.

The method of marking the product with a construction mark should be in accordance with the Regulation of the Minister of Infrastructure and Construction dated 17 November 2016 on the manner of declaring the performance of construction products and the method of marking them with a construction mark (Journal of Laws of 2016, item 1966, as amended).

The marking of a product with a construction mark should be accompanied by the following information:

- the last two digits of the year in which the construction mark was first placed on the construction product,
- the manufacturer's name and registered office or an identification mark enabling the manufacturer's name and registered office to be clearly identified,
- name and type designation of the construction product,
- the number and year of issue of the national technical assessment according to which the performance was declared (ITB-KOT-2020/1241 issue 1),
- the number of the national declaration of performance,
- the level or class of the declared performance,
- the name of the certification body which participated in the assessment and verification of the constancy of performance of the construction product,



- the address of the manufacturer's website if the national declaration of performance is made available on it.

The safety data sheet and/or information on dangerous substances contained in the construction product, as referred to in Articles 31 or 33 of Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and establishing a European Chemicals Agency, should be provided or made available together with the national declaration of performance.

In addition, the labelling of a construction product which constitutes a dangerous mixture under REACH should comply with the requirements of Regulation (EC) No 1272/2008 of the European Parliament and of the Council on classification, labelling and packaging of substances and mixtures (CLP), amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

5. ASSESSMENT AND VERIFICATION OF CONSTANCY OF PERFORMANCE

5.1. National System for the Assessment and Verification of Constancy of Performance

In accordance with the Regulation of the Minister of Infrastructure and Construction of 17 November 2016 on the manner of declaring the performance of construction products and the manner of marking them with a constructional mark (Journal of Laws of 2016, item 1966, as amended), system 1 of assessment and verification of constancy of performance applies.

5.2. Type testing

The performance characteristics, as assessed in section 3, determine the product type test until changes in raw materials, components, production lines or production facilities occur.

5.3. Factory production control

The manufacturer should have in place a system of factory production control in the production facility. All the elements of this system, the requirements and provisions adopted by the manufacturer should be documented in a systematic manner in the form of rules and procedures, including records of tests carried out. The factory production control should be adapted to the production technology and ensure continuity in serial production of the declared performance characteristics of the product.

Factory production control includes specification and verification of raw materials and ingredients, inspection and testing in the manufacturing process and control tests (according to section 5.4), carried out by the manufacturer in accordance with a prescribed test plan and in accordance with the principles and procedures laid down in the documentation of factory production control.

The results of production control should be systematically recorded. The records of the register should confirm that the products meet the criteria for assessment and verification of constancy of performance characteristics. Individual products or batches of products and associated manufacturing details must be fully identifiable and reproducible.

5.4. Control tests

5.4.1. Test programme. The test programme includes:

- a) current tests,
- b) periodical tests.

5.4.2. Current tests. Current tests include checking of the following:

- a) dimensions,
- b) composite density.



5.4.3. Periodical tests. Periodical tests include checking of the following:

- a) dimensional stability,
- b) Charpy impact strength,
- c) anti-slip properties,
- d) tensile strength,
- e) tensile modulus of elasticity,
- f) flexural modulus of elasticity,
- g) resistance to impact at +23 °C and -20 °C,
- h) chemical resistance,
- i) resistance to accelerated ageing,
- j) deflections,
- k) reaction to fire class:

5.5. Frequency of testing

Current tests should be carried out in accordance with the established test plan, but not less frequently than for each batch of products. The batch size of the product should be specified in the factory production control documentation.

Periodic tests should be performed at least once every 3 years.

6. NOTICE

6.1. National Technical Assessment ITB-KOT-2020/1241 edition 1 is a positive assessment of the performance of these essential characteristics of EVER-K platform gratings and EVER-S stair treads which, in accordance with the intended application resulting from the provisions of the Assessment, have an impact on the fulfilment of basic requirements of the construction works in which the product will be applied.

6.2. The National Technical Assessment ITB-KOT-2020/1241 edition 1 is not a document authorising the marking of a construction product with a construction mark.

Pursuant to the Construction Products Act of 16 April 2004, (Journal of Laws of 2020, item 215), the products covered by this National Technical Assessment may be placed on the market or made available on the domestic market provided that the manufacturer has assessed and verified the constancy of performance, drawn up a national declaration of performance in accordance with ITB-KOT-2020/1241 National Technical Assessment, Issue 1 and marked the products with the construction mark in accordance with the applicable regulations.

6.3. National Technical Assessment ITB-KOT-2020/1241 issue 1 does not violate the rights arising from the provisions on industrial property protection and in particular from the Act of 30 June 2000 – Industrial Property Law (Journal of Laws of 2020, item 286). Ensuring these rights is one of the responsibilities of the users of this National Technical Assessment of the Building Research Institute.

6.4. The Building Research Institute, while issuing the National Technical Assessment, shall not be liable for any infringement of exclusive and acquired rights.

6.5. The National Technical Assessment does not relieve the manufacturer of products from responsibility for their proper quality, and contractors of construction works from responsibility for their proper use.

6.6. The validity of the National Technical Assessment may be extended for further periods, not exceeding 5 years.

7. LIST OF DOCUMENTS USED IN THE PROCEDURE



7.1. Reports, test reports, assessments, classifications

- 1) LZM01-011614/19/Z00NZM. Test report on EVER-K platform gratings and EVER-S stair treads made of polyester-glass laminate. Building Materials Engineering Department of the Building Research Institute (BRI).
- 2) LZM02-011614/19/Z00NZM. Test report on EVER-K platform gratings and EVER-S stair treads made of polyester-glass laminate. Construction Materials Engineering Department of the BRI.
- 3) LZK00-02137/18/Z00NZK. Test report on platform gratings made of polyester-glass laminate. Building Structures, Geotechnics and Concrete Department of the BRI.
- 4) 01614.1/19/Z00NZP. Classification in terms of reaction to fire according to PN-EN 13501-1:2019-02 for EVER-K gratings and EVER-S stair treads, together with test report LZP01- 01614/19/Z00NZM. Fire Research Department of the BRI.
- 5) 01614.2/19/Z00NZP. Classification in terms of reaction to fire according to PN-EN 13501-1:2019-02 for EVER-K gratings and EVER-S stair treads, together with the test reports LZP04-01614/19/Z00NZM and LZP04-01614/19/Z00NZM. Fire Research Department of the BRI.

7.2. Standards and related documents

PN-EN 13245-1:2010	<i>Plastics. Unplasticized poly(vinyl chloride) (PVC-U) profiles for building applications. Part 1: Designation of PVC-U profiles</i>
PN-EN 13501-1:2019	<i>Fire classification of construction products and building elements. Part 1: Classification using data from reaction to fire tests</i>
PN-EN ISO 175:2010	<i>Plastics. Methods of test for the determination of the effects of immersion in liquid chemicals</i>
PN-EN ISO 178:2011+A1:2013	<i>Plastics. Determination of flexural properties</i>
PN-EN ISO 179-1:2010	<i>Plastics. Determination of Charpy impact properties. Part 1: Non-instrumented impact test</i>
PN-EN ISO 1183-1:2013	<i>Plastics. Methods for determining the density of non-porous plastics. Part 1: Immersion method, liquid pycnometer method and titration method</i>
PN-EN ISO 4892-1:2001	<i>Plastics. Methods of exposure to laboratory light sources Part 1: General guidance</i>
PN-EN ISO 4892-2:2013	<i>Plastics. Methods of exposure to laboratory light sources Part 2: Xenon-arc lamps</i>
PN-ISO 7724-2:2003	<i>Paints and varnishes. Colorimetry. Part 2: Colour measurement</i>
PN-ISO 7724-3:2003	<i>Paints and varnishes. Colorimetry. Part 3: Calculation of colour differences</i>
DIN 51130:2004	<i>Testing of floor coverings - Determination of the anti-slip properties - Workrooms and fields of activities with slip danger, walking method - Ramp test</i>

ANNEXES



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Annex A.

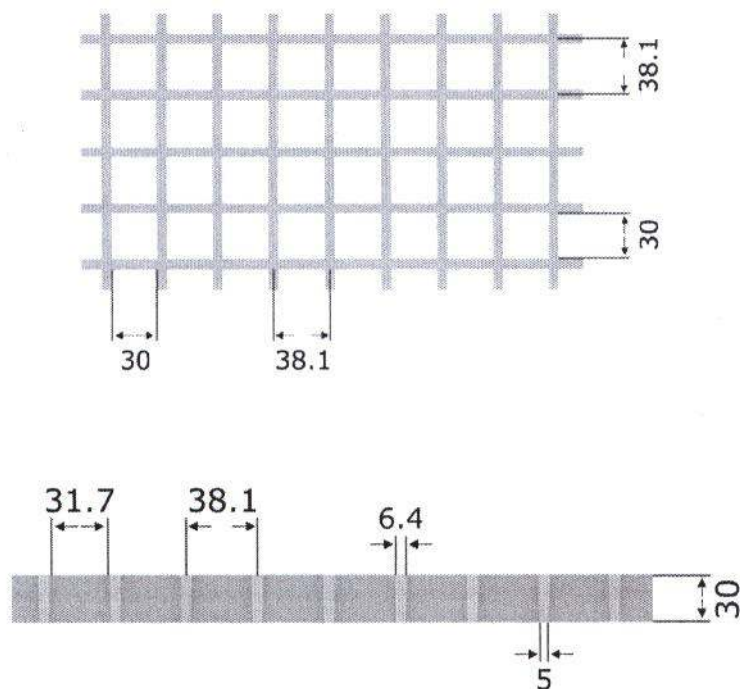


Figure A1. EVER-K platform grating and EVER-S stair tread, 30 mm high

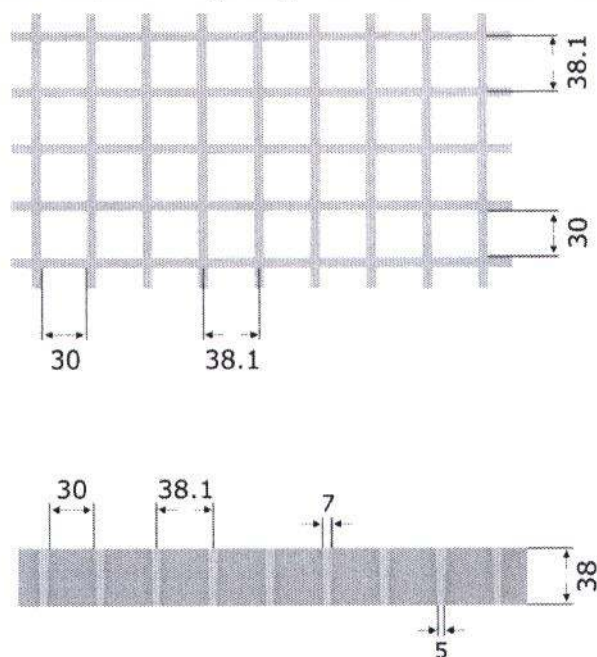


Figure A2. EVER-K platform grating and EVER-S stair tread, 38 mm high

Annex A to the National Technical Assessment ITB-KOT-2020/1241 Edition 1

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Annex B.

Table B1. Deflection, mm, for uniformly distributed load

		Uniformly distributed load, kg/m ²				
Support spacing, mm	Grating height, mm	120	240	360	480	970
		Deflection, mm				
457	30	0.11	0.23	0.33	0.45	0.91
610	30	0.36	0.69	1.02	1.35	2.71
	38	0.18	0.37	0.54	0.72	1.45
914	30	1.58	3.15	4.78	6.27	12.69
	38	0.93	1.84	2.77	3.70	7.37
1219	38	2.85	5.67	8.48	11.3	-

Table B2. Uniformly distributed load with deflection ≤ 1%

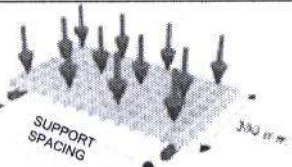
	Grating height, mm	Uniformly distributed load with deflection < 1%, kg/m ²
Support spacing, mm		
457	30	5018
610	30	2203
	38	4022
914	30	700
	38	1190
1219	38	516

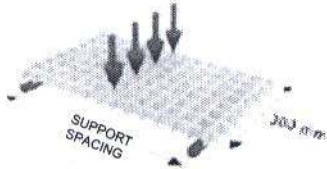
Table B3. Deflection, mm, for linear load

		Linear load, kg/300 mm				
Support spacing, mm	Grating height, mm	100	150	300	600	900
		Deflection, mm				
457	30	1.09	1.67	3.21	6.36	-
610	30	2.45	3.68	7.22	-	-
	38	1.35	2.03	3.92	7.86	11.83
914	30	7.62	-	-	-	-
	38	4.45	6.70	13.34	-	-
1219	38	10.3	-	-	-	-

Table B4. Linear load with deflection ≤ 1%



CERTIFIED - TRUE TRANSLATION FROM THE POLISH LANGUAGE

	Grating height, mm	Linear load with deflection < 1%, kg/300 mm
Support spacing, mm		
457	30	430
610	30	252
	38	460
914	30	120
	38	204
1219	38	118

END OF TRANSLATION

I, Jan J. Kaluza, Attested Translator, entered under No. TP/1413/06 into the register kept by the Minister of Justice, hereby certify the foregoing text to be a true and accurate translation of the document produced to me.

Witness my hand and official seal, Chorzow, this 3rd day of February, 2021
Repertory No. 140/2021

Attested Translator and Interpreter of English
Jan J. Kaluza, M.A.

